



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,199	10/16/2001	Byung-Gi Jung	1594.1010	3194
21171	7590	09/12/2005		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER HOLLINGTON, JERMELE M	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/977,199	JUNG, BYUNG-GI	
	Examiner	Art Unit	
	Jermele M. Hollington	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-6 and 14-16 is/are allowed.
- 6) ☒ Claim(s) 1,2,7-13 and 17-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 7-13, 17-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 7, 9, 12, 18-19 and 23, the claims states that a space adjusting plate is provided with a plurality of differently slanted guides formed to individually adjust the pitches of the vacuum adsorbers. In the specification, on page 8, lines 13-20, it discloses: "*The space adjusting plate 55 functions to simultaneously adjust all the pitches of the vacuum adsorbers 53. A plurality of guide slots 55a are slantingly formed through the space adjusting plate 55 to receive a plurality of guide projections 53a protruded from the upper portions of the vacuum adsorbers 53. As shown in FIG. 6, when the space adjusting plate 55 is lifted (in the arrow "A" direction of FIG. 6) by the operation of the pneumatic cylinder 57, the pitches of the vacuum adsorbers 53 are narrowed to correspond to the spaces between the devices positioned in the presizing unit 30.*" Base on the above paragraph, it appears that the slanted guides are all the same and that the pitches simultaneously adjust not individually adjusted as claimed.

For examination purposes, the examiner is taking the position that all pitches simultaneously being adjusted and that all of the guides are slanted the same way.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 7-13 and 17-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Kress (6439631).

Regarding claims 1 and 23, Kress discloses [see Figs. 1-2] a semiconductor device loading apparatus (pick and place head 41) for test handlers (pick and place device shown in col. 3, lines 61-62), comprising: a body (gripper mechanism 31) including a plurality of pickup cylinders (air cylinders 10) provided with a plurality of vacuum adsorbers (vacuum tip 12) to vacuum-suck and to transfer semiconductor devices [not shown in Figs but see col. 1, lines 5-9] to be tested, a space adjusting plate (pantograph 44 see Fig.4) to adjust pitches of the vacuum adsorbers (12) [see col. 2, lines 45-64], and an elevation guiding unit (combination of gearbox 48, servo motor 46 drive pulley 52 and drive shaft 50) to guide one of lifting and lowering of the space adjusting plate (44), wherein said space adjusting plate (44) is provided with a plurality of slanted guides (beams 15 and 16) formed to adjust the pitches of the vacuum adsorbers (12), with said vacuum adsorbers (12) each interacting with a respective one of the slanted guides (15 or 16) and a guide block fixing plate (guide rail 9) separate from the body (31) to guide the semiconductor devices to be accurately positioned in pockets of a test tray [not shown], respectively.

Regarding claim 2, Kress discloses [see Figs. 1-2] a semiconductor device loading apparatus (pick and place head 41) for test handlers (pick and place device shown in col. 3, lines 61-62), comprising: a body (gripper mechanism 31) including a plurality of pickup cylinders (air cylinders 10) provided with a plurality of vacuum adsorbers (vacuum tip 12) to vacuum-suck and to transfer semiconductor devices [not shown in Figs but see col. 1, lines 5-9] to be tested, a space adjusting plate (pantograph 44 see Fig.4) to adjust pitches of the vacuum adsorbers (12) [see col. 2, lines 45-64], and an elevation guiding unit (combination of gearbox 48, servo motor 46 drive pulley 52 and drive shaft 50) to guide one of lifting and lowering of the space adjusting plate (44), and a guide block fixing plate (guide rail 9) separate from the body (31) to guide the semiconductor devices to be accurately positioned in pockets of a test tray [not shown], respectively, said space-adjusting plate (pantograph 44) is provided with a plurality of guide slots (beams 15 and 16) formed to allow spaces there between to be inherently [see Note below] downwardly narrowed so as to adjust the pitches of the vacuum adsorbers (12), and said vacuum adsorbers (12) are each provided with a guide projection (sub plate 33) adapted to insert to a respective one of the guide slots (15 or 16).

Note: Although the prior art does not specifically disclose the claimed “space-adjusting plate is provided with a plurality of guide slots formed to allow spaces there between to be downwardly narrowed so as to adjust the pitches of the vacuum adsorbers”, this feature is seen to be an inherent teaching of that device since movable portion 23, motor housing 3 and controller 61 are disclosed and it is apparent that some type of downwardly motion of the pitches must be presented for the guide slots to function as intended.

Regarding claim 7, Kress discloses [see Figs. 1-2] a semiconductor device loading apparatus (pick and place had 41), comprising: a plurality of device loading units (gripper mechanisms 31) to load semiconductor devices [not shown but see col. 1, lines 5-9], a space adjusting unit (pantograph 44 shown in Fig. 4) provided with a plurality of slanted guides (beams 15 and 16) formed to adjust pitches of the device loading units (31); and an elevation control unit (combination of gearbox 48, servo motor 46 drive pulley 52 and drive shaft 50) coupled to the space adjusting unit (44) and controlling an elevation of the space adjusting unit (44) to change a spacing between respective adjacent device loading units (31) in accordance with the elevation of the space adjusting unit (44) by causing the respective adjacent device loading unit (31) to interact with a respective one of the slanted guides (15 and 16).

Regarding claim 8, Kress discloses a guide block-fixing unit (guide rail 9) provided adjacent to the plurality of device loading units (31) to guide the semiconductor devices there through to pockets of a test tray [not shown], respectively.

Regarding claim 9, Kress discloses said space adjusting unit (44) comprises: a plurality of space changing units (beams 15 and 16), including the plurality of slanted guides (15 and 16), corresponding to the plurality of device loading units (31) to change each respective spacing between adjacent device loading units (31).

Regarding claim 10, Kress discloses [see Fig. 4] each respective spacing between adjacent device loading units (31) is narrowed, when the elevation of the space-adjusting unit (44) is increased.

Regarding claim 11, Kress discloses [see Fig. 5] each respective spacing between adjacent device loading units (31) is widened, when the elevation of the space-adjusting unit (44) is decreased.

Regarding claim 12, Kress discloses each space changing unit (15 and 16) comprises: a guide slot (link points 18) formed on the space adjusting unit (44) being one of the plurality of slanted guides (15 and 16); and a guide projection (sub plate 33 with screws see Fig. 2) formed on a respective one of the device loading units (31) to insert into the guide slot (18) corresponding to a respective one of the device loading units (31) to cause the interaction with the respective one of the slanted guides (15 and 16).

Regarding claim 13, Kress discloses the guide block-fixing unit (9) is remote from the device loading units (31) and the test tray, and is provided with guide blocks (guide block 42) of a number equal to a number of the pockets of the test tray [not shown].

Regarding claim 17, Kress discloses the plurality of device loading units (31), the space-adjusting unit (44) and the elevation control unit (combination of gearbox 48, servo motor 46 drive pulley 52 and drive shaft 50) move separately from the guide block-fixing unit (9).

Regarding claim 18, Kress discloses [see Figs. 1-2] a method of loading a semiconductor device with a loading apparatus (pick and place head 41) for test handlers (pick and place device see col. 3, lines 61-62), comprising: adjusting pitches of vacuum adsorbers (vacuum tips 12) by one of lifting and lowering of a space adjusting plate (pantograph 44), wherein said space adjusting plate (44) is provided with a plurality of slanted guides (beams 15 and 16) formed to adjust the pitches of the vacuum adsorbers (12), with said vacuum adsorbers (12) each interacting with a respective one of the slanted guides (15 or 16), vacuum-sucking and

Art Unit: 2829

transferring [via gripper mechanism 31] the semiconductor devices to be tested to the plurality of vacuum adsorbers (12), and guiding [via guide rail 9] the vacuum-sucked and transferred semiconductor devices to be positioned in pockets of a test tray, respectively.

Regarding claim 19, Kress discloses changing [via combination of gearbox 48, servo motor 46 drive pulley 52 and drive shaft 50)] a spacing between adjacent device loading units in accordance with an elevation of a space adjusting unit (44) by controlling an elevation thereof, wherein said space adjusting plate (44) is provided with a plurality of slanted guides (beams 15 and 16) formed to adjust the pitches of the vacuum adsorbers (12), with said vacuum adsorbers (12) each interacting with a respective one of the slanted guides (15 or 16); and loading the semiconductor devices in accordance with the changed spacing.

Regarding claim 20, Kress discloses passing each of the semiconductor devices through a guide block (guide block 42) to position the semiconductor devices on a test tray.

Regarding claim 21, Kress discloses the changing of the spacing between adjacent device loading units (31) comprises: narrowing of the spacing [see Fig. 4], when the elevation of the space-adjusting unit (44) is increased.

Regarding claim 22, Kress discloses the changing of the spacing between adjacent device loading units (31) comprises: widening of the spacing [see Fig. 5], when the elevation of the space-adjusting unit (44) is decreased.

Conclusion

Response to Arguments

5. Applicant's arguments filed June 10, 2005 have been fully considered but they are not persuasive.

The applicant argues: "Independent claims 1, 7, 18, 19, and 23 have been amended to particularly include at least a plurality of differently slanted guides formed to individually adjust the pitches of the vacuum adsorbers, with said vacuum adsorbers each interacting with a respective one of the differently slanted guides, with differing scope and breadth."

In response to the above argument, base on page 8, lines 13-20, it appears that the slanted guides are all the same and that the pitches simultaneously adjust not individually adjusted as claimed. The examiner is taking the position that all pitches simultaneously being adjusted and that all of the guides are slanted the same way.

6. Claims 3-6 and 14-16 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: regarding claim 3, the reason for the allowance of the claim is due to semiconductor device comprising guide block fixing plate is positioned to be downwardly spaced apart from the vacuum adsorbers and upwardly spaced apart from the test tray, and is provided with guide blocks of a number equal to a number of the pockets of the test tray. Since claims 4-6 depend from claim 3, they are also considered to contain allowable subject matter.

Regarding claim 14, no prior art has been found to provide guide blocks with an opening sized equal to a size of each of the semiconductor devices, and with a pair of guide pins downwardly extending from front and rear edges thereof. Since claims 15-16 depend from claim 14, they are also considered to contain allowable subject matter.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2829

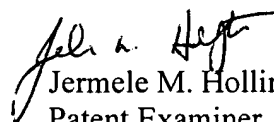
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (517) 272-2034. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH
September 6, 2005


Jermele M. Hollington
Patent Examiner
Art Unit 2829